**Method for compressing the working fluid during a water/steam combination process**

**Patent Claims**

1. A method for compressing the working fluid in a combined cycle water/steam process in multi-stage turbocompressors with intercooling in the individual compression stages by addition of a coolant to the working fluid, characterized in that very finely atomized water, which is obtained by pressure-atomization of water to form microdroplets, is used as coolant, in that the coolant is added to the working fluid directly in at least one compression stage, in that the coolant passes into the state of the working fluid during compression, in that the coolant is added to the working fluid in a quantity which serves to maintain the thermal equilibrium, in that the evaporation of the coolant takes place along the saturation curve, and in that the addition of coolant between the compressor inlet and the compressor outlet results in an increase in the working fluid mass flow.

2. The method as claimed in claim 1, characterized in that the coolant is obtained from liquefied working fluid.

3. The method as claimed in one of claims 1 and 2, characterized in that the coolant is supplied to the working fluid before the first compression stage.

4. The method as claimed in one of claims 1 to 3, characterized in that the evaporation heat of the coolant is taken from the compression system in connection with the reduction in apparatus and medium temperatures.

5. The method as claimed in one of claims 1 to 4, characterized in that the mass flow of the working fluid in the turbocompressor is made variable by virtue of the controllable addition of coolant to individual compression stages.

6. The method as claimed in one of claims 1 to 5, characterized in that the compression volume is reduced owing to the internal cooling of the working fluid.